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The Impact of Digitalisation on Job Quality and Social Dialogue in Germany's Public Services

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To the Point

- Digitalisation in the public sector presents both opportunities and challenges, impacting working conditions, work organisation and social dialogue, yet research on its effects remains limited, especially in Germany.
- In particular, the role of digitalisation in shaping work dynamics, workload distribution and the health of public-sector employees remains an understudied area of inquiry.
- "DIGIQU@LPUB", the European research project explored the impact of digitalisation on public administration, hospitals and the electricity sector, highlighting key concerns such as staff shortages, work intensification and the need for improved digital infrastructure.
- While digitalisation enhances efficiency and work-life balance, it also increases workload and stress, necessitating comprehensive training and stronger workplace agreements to address emerging challenges.
- A balanced approach is required to ensure that digitalisation fosters service quality and fair working conditions in shaping the future of digital work in public services.

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1 Introduction

Digitalisation has emerged as a pivotal issue within the public sector, presenting both transformative opportunities and emergent challenges. The European Commission-funded DIGIQU@LPUB[1] research project has aimed to systematically evaluate the implications of digitalisation across key dimensions of workplace quality and social dialogue for public service employees in three targeted sectors: public administration, hospital sector and energy provision.

The quality of public service delivery and employment conditions in these sectors holds paramount societal significance, as it directly correlates with the well-being and satisfaction of citizens and service recipients, including patients in healthcare contexts. As in other economic domains, digital transformation exerts significant influence on working conditions, organizational structures and mechanisms of social engagement within the public sector.

Digitalisation is a broad concept encompassing multiple dimensions, including technological innovation, procedural transformation and systemic change. In the context of public services, it refers to the outcomes emerging from the interaction between digital technologies, service providers and service users (Voss and Rego 2019). In recent years, public service employees have increasingly relied on interconnected tools and systems that influence how tasks are organised, executed, scheduled, monitored and ultimately delivered to users. These technologies range from mobile applications on laptops, tablets and smartphones to broader transformations such as automation, robotics (e.g., patient-lifting aids) and artificial intelligence in data management. In the context of this project, digitalisation denotes the integration of digital technologies and the associated transformations in the organisation of work.

The existing research, however, predominantly focuses on the private sector, resulting —particularly in the German context— in a relative lack of studies addressing the specific implications for the public sector in Germany. In particular, the role of digitalisation in shaping work dynamics, workload distribution and the health of public-sector employees remains an understudied area of inquiry.

Unlike private industries, the public sector operates outside traditional market mechanisms to a great extent, as the pricing and demand for public services are not

[1] A more detailed project description, in-depth case studies and analytical reports for the partner countries in the project (across eight EU member states: Denmark, Finland, France, Germany, Hungary, Italy, Poland, and Spain) can be found on the project website: www.ose.be/digiqualpub. The impact of digitalisation on job quality and social dialogue in the public services – (DIGIQU@LPUB)

dictated by competition but by societal needs. This also affects interest representation, as civil servants ("Beamte") in public administration are legally prohibited from striking, while hospital staff cannot suspend operations due to their obligation to provide continuous patient care. Similarly, in the electricity sector, uninterrupted supply must be maintained, preventing industrial action from leading to service disruptions. These public welfare obligations create fundamental distinctions between digitalisation in public services and in the private sector, necessitating sector-specific analysis.

The European project has aimed to advance scientific and policy-oriented understanding of how digital transformation reshapes occupational conditions in public services, prioritizing workers' own perceptions of technological impacts on their roles. A core objective involves fostering awareness among trade unions and policymakers regarding the challenges and opportunities inherent in workplace digitalisation.

This paper recaps findings from the German Case Study[2], conducted as a project partner by the IAT. It synthesizes principal insights derived from secondary research and original empirical findings to elucidate the ramifications of digital transformation on roles within public sector employment in Germany. In addition, key statistics with respect to the three sectors in question have been updated with recent available official statistics. A core objective is to underscore the imperative for trade unions and policymakers to critically engage with the systemic shifts precipitated by technological advancements.

Across all three sectors, digitalisation presents both opportunities and structural challenges. Unlike in private industries, where digital transformation is often driven by competitive market forces, public services must balance technological advancements with their obligation to provide uninterrupted and equitable services.

Methodologically, the project has employed a mixed-methods framework combining qualitative and quantitative approaches. The German case study draws on document analysis, literature reviews and 12 semi-structured interviews with sectoral stakeholders, including union representatives. Complementing this, the

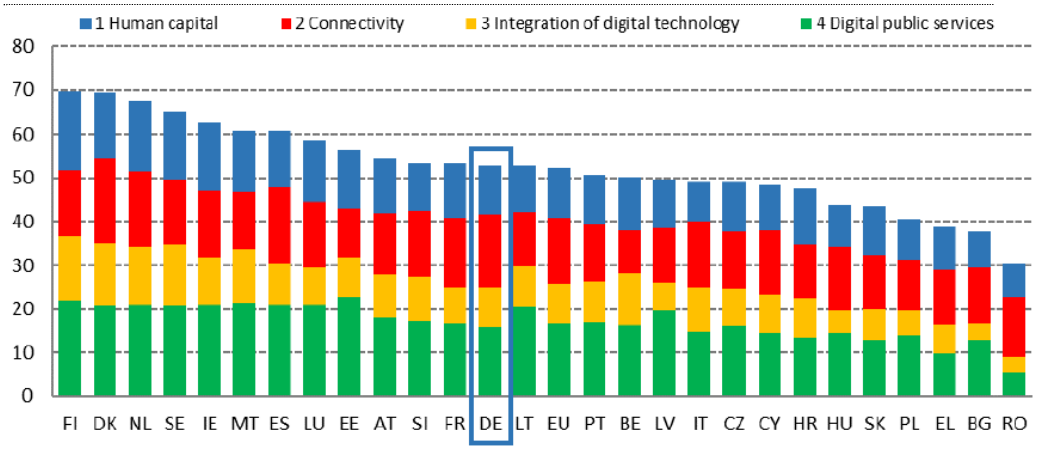
[2] The cross-country findings of the project have been published in two main reports: "The Impact of Digitalisation on Job Quality in the Electricity, Hospital, and Public Administration Sectors in Eight EU Countries" (www.ose.be/digiqualpub/files/deliverables/2023_digiqualpub_Deliverable3.2_Digitalisation&JobQuality.pdf), and "The Impact of Digitalisation on Social Dialogue: A Comparative Cross-Country and Cross-Sectoral Analysis" (www.ose.be/digiqualpub/files/deliverables/2023_digiqualpub_Deliverable4.2_Digitalisation&SocialDialogue.pdf) : html [9.4.2025]

DIGIQU@LPUB Web Survey (DGQS) gathered self-reported data from public service workers on digitalisation's impacts.

2 Digitalisation of Public Services in Germany: Challenges and Insights

Digitalisation is a key priority for the German Federal Government, reflected in targeted strategies and significant investments in digital technology research and development. There has been several initiatives and programmes to enhance digitalisation process in general: The Digital Strategy, first adopted in August 2022 and updated in April 2023, serves as the cornerstone policy, covering all aspects of a sovereign digital society, an innovative economy and a digital state. Additionally, Germany has introduced sector-specific strategies to accelerate digital transformation, including the Gigabit Strategy, AI Strategy, Data Strategy, Start-up Strategy, Education in the Digital World Strategy and the National Further Education Strategy. These initiatives collectively aim to strengthen digital infrastructure, technological innovation, and workforce development.

Figure 1: Digital Economy and Society Index (DESI) 2022 ranking



Source: Digital Economy and Society Index (DESI) 2022, Country Report Germany.

The European Commission's annual report "State of the Digital Decade" monitors Member States' progress on digital policy areas. The report assesses developments in four key areas: digital infrastructure, digital skills, e-government services and business digitalisation. The report from 2024 states that Germany[3] has made notable advancements in connectivity and ICT expertise, but lags behind in fibre expan-

[3] https://digital-strategy.ec.europa.eu/en/library/digital-decade-2024-country-reports : html [9.4.2025]

sion, digital literacy, SME digitalisation and e-government services. In 2022, Germany ranked 13th of 27 EU Member States in the Digital Economy and Society Index (DESI), with a score of 52.9.

With respect to public services, Germany is below the EU average in digitalisation of public services, both for citizens (score 75.8 versus the EU average of 79.4) and businesses (78.6 versus 85.4). As of March of 2025, Germany had 167 digital public services available nationwide, compared to the 575 services originally planned for digitalisation under the Online Access Act (OZG)[4] by the end of 2022.

The European report states that continued policy efforts and infrastructure investment are needed to fully realise the country's digital potential.

3 Overview of three Sectors

3.1 Public Administration

Public administration, tasked with enforcing legislative frameworks while safeguarding citizen welfare and satisfaction—thereby reinforcing political legitimacy—faces escalating demands for accessibility and efficiency in service delivery. The German public sector features two primary forms of employment: civil servants (Beamte) and public employees (Angestellte). In 2023, round 5,27 million individuals were employed in this sector, with 3,3 million classified as employees, 1,63 million as civil servants, and 169 thousand as soldiers (Destatis 2024a)[5]. Over the past decades, public sector employment has declined significantly, shrinking from 6.7 million in 1991 to 5,3 million in 2023, largely due to workforce reductions following German reunification. These figures underscore the sector's continued importance in the German labor market despite structural workforce reductions.

Employment distribution varies by administrative level: civil servants predominantly work at the federal state (Länder) level, while municipal administrations employ a higher proportion of public employees. Public administration operates outside traditional market mechanisms, as its primary focus is public welfare rather than competition or profit. This structural difference also affects the representation of employees: while civil servants are organised in works councils (*Personalräte*) and trade unions, they are prohibited from striking, which limits their ability to advocate for better working conditions.

[4] https://dashboard.digitale-verwaltung.de : html [9.4.2025]

[5] Destatis-Employment in public services: https://www.destatis.de/DE/Themen/Staat/Oeffentlicher-Dienst/_inhalt.html : html [9.4.2025]

3.2 Hospital Sector

The healthcare sector employs as of 2023 round 6 million people, accounting for approximately one-eighth of Germany's total workforce. Employment in the sector has been steadily increasing, in 2019, there were 5.7 million healthcare workers (Destatis 2024b). This steady growth highlights the sector's critical role in the labor market, even amid persistent challenges related to financing, staffing shortages, and governance complexity. With 1.874 hospitals, the sector employs 1,295 thousand persons (326,000 male and 969,000 female), which highlights the high share of women in the sector.(ibid.)

According to data from the German Federal Statistical Office, there were exactly 1,874 hospitals in Germany in 2023. Of these, 750 were privately owned, while 534 were under public ownership. Additionally, 590 hospitals were operated by non-profit organizations, including charitable associations and churches.

Germany's hospital sector is characterised by a highly fragmented system of payers and providers, which often results in inefficiencies and increased costs, while also affecting the quality of care in certain settings (OECD 2019b). Governance responsibilities are divided across three levels:

- The Federal Ministry of Health oversees policymaking, including legislative development and administrative regulations.
- State governments (Länder) are responsible for hospital planning and the financing of hospital investments.
- Self-governing bodies manage operational aspects within the healthcare syste and health insurance companies are responsible for paying the ongoing operating costs.

The Hospital Future Act (Krankenhauszukunftsgesetz; 2020) has created a legal basis in Germany to promote digitalisation in the hospital sector.

Hospitals, like public administration, provide essential services that cannot be interrupted, even during industrial action. Although staff can engage in protests or symbolic strikes, full-scale work stoppages are not an option, as patient care must always be ensured.

3.3 Electricity Sector

In 2021, Germany's energy sector comprised 859 companies with 20 or more employees, generating a total turnover of €716 billion. These companies employed

218.054 workers (Destatis 2024c)[6]. More recent industry data from 2023–2024 indicate around 145,000–149,000 employees specifically in electric utilities, reflecting modest growth in the past few years.

Unlike other public services, the electricity sector operates in a partly liberalised market, but its fundamental role in ensuring a stable energy supply aligns it with the principles of public welfare. Digitalisation has played a significant role in transforming the sector, particularly through automation, smart grids and improved energy distribution. However, maintaining a reliable energy supply remains a critical challenge, as any disruption could have severe consequences for society and the economy. The sector's transition towards renewable energy sources further underscores the necessity of digital solutions to manage increasingly complex energy networks.

4 Impact of digitalisation on job quality

Despite the increasing relevance of digitalisation, research on its impact on working conditions and job quality in Germany remains limited, particularly in the public sector. While numerous studies focus on the private sector, the unique characteristics of public services—including their public interest mandate and regulated employment structures—have contributed to this gap. The studies conducted in Germany highlight both positive and negative effects of digitalisation process in public services (OECD 2019a; DGB 2018; Falk et al. 2021; DBB 2022).

Digitalisation would enhance efficiency by streamlining workflows, reducing manual tasks, shortening waiting times, and improving service accessibility for citizens. The shift to digital processing and automation can also lead to cost savings, while fostering collaborative working environments across locations. Furthermore, digital tools increase transparency and accountability in public administration and facilitate the creation of new, innovative services that were previously not feasible.

From a workplace perspective, digitalisation can reduce physical strain by integrating technologies such as wearable robotic assistance (Roth 2018), thus improving occupational health.

Despite its advantages, digitalisation presents several challenges. The increased use of digital technologies raises data privacy and security concerns, necessitating substantial investments in infrastructure. Moreover, automation can lead to job redundancies, reducing job security (Dengler & Matthes 2015). While some new roles are

[6] Destatis-Employment in energy sector: https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Energie/Beschaeftigte-Umsatz-Investitionen/_inhalt.html : html [9.4.2025]

emerging, many routine tasks are being replaced by algorithms and machines, altering the content and nature of work. Analyses at the level of job-related tasks show that even complex activities are becoming increasingly digitalised (Dengler & Matthes 2021).

One major concern is the blurring of boundaries between work and private life, particularly for knowledge workers, who may find themselves expected to always be available. Interviewees also highlighted the potential for social isolation in remote work settings, as digitalisation reduces face-to-face interactions between employees and citizens, sometimes leading to a deterioration in personal communication. In some cases, digitalisation has also contributed to an increase in precarious working conditions, with some employees lacking social security or fair wages (DGB 2017; DGB 2018).

Furthermore, digitalisation raises skill requirements, demanding continuous training and upskilling to keep pace with technological developments (OECD 2019a). If not complemented by proper qualification measures, digitalisation can intensify workloads rather than alleviate them, further increasing work-related stress. The following sections provide a synthesis of the key findings from the DGQS survey, complemented by insights derived from interviews, across various dimensions of job quality relevant to the sectors under consideration.

4.1 Impact of digitalisation on job quality in the Public Administration

The DIGIQU@LPUB Case Study shows that digitalisation is fundamentally transforming public administration, reshaping work processes and service delivery for both employees and citizens. Digital tools are widely used for task planning, data management and communication, with many administrative processes now automated. While digitalisation is generally viewed as a positive and inevitable development, challenges remain in implementation speed, employee involvement and organisational adaptation. Digitalisation can promote more flexible working arrangements, including remote work and flexible hours, which have become increasingly relevant, especially following the COVID-19 pandemic. Many interviewees confirmed that, when effectively implemented, digitalisation improves communication and cooperation between employees and management, enhances collaboration and meets the growing demand for location-independent work.

Work Organisation and Digital Tools

The DGQS survey confirmed the widespread use of digital tools in public administration, with 78.9% of employees using them for scheduling, 73.7% for data collection and 84.2% for communication. Digitalisation has increased decision-making autonomy (44.4%) and reduced routine tasks (54.1%), while improving coordination with colleagues and service quality for users (63.9%). However, work intensity

has also risen (43.2%) and employee monitoring has increased, though to a lesser extent than in the electricity sector.

Remote Work and Work-Life Balance

The Covid-19 pandemic accelerated the adoption of remote work, with 92% of respondents stating that teleworking was possible in their job. Employees appreciated the flexibility but noted that technical infrastructure was inadequate during the transition. While 63.2% found that digitalisation improved their work-life balance, others struggled with blurred boundaries between professional and personal life (21.6%).

Health and Training Challenges

The impact on physical health was significant, with 44.4% reporting new or worsening conditions such as back and eye pain. Mental health effects were less severe, but 20% experienced stress and 12% burnout. Digitalisation has also increased the need for training, yet 39.4% of employees had not received any formal digital training, often learning informally through workplace interactions. The public sector faces a major IT skills shortage, as it struggles to compete with the private sector in pay and professional development opportunities.

Employment Security and Career Prospects

Unlike in other sectors, job security is not a major concern, with only 15.8% fearing job losses due to digitalisation. Instead, many employees saw digital skills development as an opportunity for career advancement within their institution (33.1%) or elsewhere (33.2%). However, low salaries and slow career progression hinder recruitment and retention of skilled IT professionals, affecting workload and digital transformation efforts.

Workers' Rights and Policy Implementation

The ‘right to disconnect’ is increasingly demanded by employees, with 50% supporting its inclusion in collective agreements. Trade unions actively negotiate the socially sustainable management of digitalisation, but effectiveness remains moderate at best. The fragmented governance structure between federal, state and municipal levels was seen as hindering digitalisation efforts and public sector initiatives continue to lag behind the government objectives.

In sum: while digitalisation has improved efficiency, service delivery, and job flexibility, its implementation has been slow and uneven. Work intensity has increased, training opportunities remain insufficient and the sector struggles to attract skilled IT professionals. The Covid-19 crisis exposed major weaknesses, particularly in remote work infrastructure, yet digitalisation remains a key priority for future public administration reforms.

4.2 Impact of digitalisation on job quality in the German Hospital Sector

Digitalisation in the hospital sector has progressed at different speeds across departments, with its impact varying across work processes, patient interactions and administrative functions. Despite ongoing technological advancements, implementation remains fragmented, often lacking a comprehensive digital strategy. Digitalisation in hospitals has long been underdeveloped compared to other sectors, with many institutions relying on outdated or fragmented digital systems. Even where digital solutions exist, they often function as isolated tools rather than part of an integrated strategy. This lack of coordination leads to inefficiencies, such as data gaps, delays, and administrative burdens for medical staff.

Work Organisation and Digital Tools

The DGQS survey shows that the use of digital tools is most prevalent in data collection, task scheduling, and communication, but significantly lower for patient interactions and performance monitoring. While digitalisation has reduced repetitive tasks (58.7%), improved coordination among colleagues (40.9%), and enhanced interaction with patients (51.4%), employees in this sector view its impact less positively compared to other public services. Only 24.5% rated digitalisation as beneficial for service quality and working conditions, with low expectations for wage improvements (8.2%).

Remote Work and Work-Life Balance

Unlike other public sectors, teleworking opportunities in hospitals are highly limited, given the need for direct patient care. Only 41.5% of employees reported that any part of their job could be done remotely, while 80% ruled out home-based patient care entirely. Digitalisation has had a moderate impact on work-life balance, with 59.2% seeing improvements but some reporting blurred boundaries between personal and professional life (23%).

Health and Training Challenges

Unlike in other sectors, digitalisation has had minimal impact on physical health, with only 8% reporting new or worsened conditions. However, mental health concerns are significant, with 18.2% attributing stress, burnout or fatigue to digitalisation. Training gaps persist, while 50.4% had to acquire new digital skills, nearly 24% had received no formal training, learning instead through informal workplace exchanges.

Employment Security and Career Prospects

Concerns about job losses due to automation remain low in this sector, with only 16.3% fearing job insecurity. Instead, employees see digitalisation as an opportunity: 36.7% believe it will open career prospects outside their current institution, and 34% expect opportunities within their current workplace.

Challenges and Structural Barriers

Digitalisation in hospitals has not followed a unified strategy, leading to inefficiencies and disconnected systems. For example, patient data recorded in digital emergency systems often still requires manual processing upon hospital arrival, highlighting the lack of interoperability. Furthermore, the sector faces broader structural issues, including staff shortages, high workloads and atypical working hours, which diminish its attractiveness despite its critical societal importance.

Digitalisation in hospitals has long been underdeveloped compared to other sectors, with many institutions relying on outdated or fragmented digital systems. Even where digital solutions exist, they often function as isolated tools rather than part of an integrated strategy. This lack of coordination leads to inefficiencies, such as data gaps, delays, and administrative burdens for medical staff.

As a summary, it can be stated for the German hospital sector that while digitalisation has brought efficiency improvements in administrative processes and patient interactions, its implementation remains fragmented and employees experience increased workloads and monitoring. Training opportunities are inconsistent, and mental health concerns are rising. Structural issues — staff shortages, and work intensity—remain the sector's core challenges, requiring urgent attention alongside further digitalisation efforts.

4.3 Impact of digitalisation on job quality in the Electricity Sector

Digitalisation, liberalization, decentralization and the establishment of transparent energy markets constitute pivotal drivers of structural transformation within Germany's electricity sector, with digitalisation representing the foremost catalyst. As an early adopter of digital solutions, the energy sector has not only undergone profound restructuring but also catalysed innovative business paradigms. The emergence of virtual energy markets and the entry of external providers into customer-oriented power distribution would have been unattainable without these technological advancements (Flögel & Beckamp 2020).

The sector has been an early adopter of digital technologies, and overall, employees perceive digitalisation as having positive effects on service efficiency, working conditions and job quality. However, as the interviews and survey show that concerns persist regarding increased work intensity, enhanced employee monitoring and the

blurring of work-life boundaries. The key findings of the DGQS survey related to the electricity sector are presented in the following sections.

Work Organisation and Digital Tools

The widespread use of mobile devices, software-controlled processes, and electronic communication has improved workplace efficiency. Digitalisation has led to greater autonomy in scheduling tasks (56.3%) and reduced time spent on repetitive tasks (75%). Coordination between colleagues has improved (63.2%) and digital tools offer a clearer overview of task implementation (84.2%). However, work intensity has increased for 82.4% of respondents, and employee performance monitoring — both by supervisors and colleagues — has become more prevalent, raising concerns about workplace surveillance and transparency.

Remote Work and Work-Life Balance

Digitalisation has facilitated greater flexibility in work arrangements, particularly remote work and mobile working. During the COVID-19 pandemic, 50% of employees were able to work from home, with 62.5% stating that this could continue permanently. However, while 37.4% reported improvements in work-life balance, another 37.5% saw no change, and 25% experienced a deterioration due to the loss of clear boundaries between professional and personal life. Trade unions remain concerned about isolation, stress and the need for clearer regulations on the 'right to disconnect', which all survey respondents supported.

Health and Safety

Digital tools have reduced physical strain for some workers (30%) and a small share (10%) reported fewer workplace accidents. However, mental health concerns have increased: 42.9% linked digitalisation to stress, fatigue, burnout, or depression, with 33.3% specifically reporting stress-related symptoms.

Skills, Training, and Career Prospects

Nearly half (45%) of employees had to acquire new digital literacy and specialised skills, while 72% received employer-sponsored training. However, only 20% found this training sufficient, with many demanding additional training and regular updates. While most employees viewed skill development as an opportunity for career advancement, they also stressed the need for training programs during working hours, financed by employers.

Employment Security and Sectoral Challenges

Automation is transforming the energy industry, with digital tools increasingly used in grid and power plant control, customer self-service, and smart meter technologies. However, only 16.6% of employees felt their job security was at risk, while

45.8% expected no major changes. The sector's future is highly dependent on political decisions, especially regarding the transition to renewable energy, decarbonisation and the response to the energy crisis linked to the war in Ukraine. Rising energy prices and supply chain disruptions could lead to market exits for smaller distribution companies and an ongoing shortage of skilled workers.

While digitalisation in the electricity sector has improved efficiency, autonomy, and flexibility, it has also intensified workloads and increased performance monitoring. The sector is undergoing structural transformation, influenced by both technological advancements and political decisions. Despite digitalisation not being the top priority for trade unions at present, it is expected to remain a key issue for the future of the workforce.

5 Social Dialog in Public Services

The impact of digitalisation on social dialogue varies across the electricity, public administration and the hospital sector in Germany, reflecting differences in industrial relations, trade union strategies and the involvement of works councils. While digitalisation offers opportunities for improving work processes and service efficiency, trade unions emphasise the need for strong co-determination, job security, and fair working conditions. Despite sector-specific variations, common challenges include work intensification, employee monitoring, and the need for comprehensive training. The lack of integrated and strategic implementation was a recurring concern among trade unions in all three sectors.

5.1 Public Administration: Implementation Gaps

The public administration sector has a high level of collective bargaining coverage (93%) and strong trade union density (60%), making it a relatively stable industrial relations environment. Trade unions such as ver.di and Deutscher Beamten Bund (DBB) emphasise job security, binding agreements on pay and training, and improved working conditions in the face of digital transformation.

The 2021 collective agreement on digitalisation between the Federal Ministry of the Interior, ver.di, and DBB was a major achievement, which guarantees training rights, job security, and pay protection for employees affected by digitalisation (DBB 2022). However, federal states and municipalities have yet to adopt similar agreements, leaving many public administration employees without comprehensive protections.

Despite these advances, the sector faces structural challenges, particularly severe staff shortages, with up to 300,000 vacancies and one-third of the workforce set to retire within a decade (DBB 2022). While digitalisation could potentially alleviate

workloads, unions stress that political decisions and fragmented governance structures between federal, state and municipal levels hinder rapid digital progress. Works councils, supported by trade unions, play a key role in negotiating digital workplace policies, but challenges remain in securing nationwide agreements on digitalisation.

A severe shortage of skilled workers and an aging workforce pose significant challenges. Digitalisation is seen as a potential solution to easing workloads, but fragmented governance between federal, state and municipal levels hinders its implementation. Works councils remain critical in shaping workplace digitalisation policies.

5.2 Hospital Sector: Structural Challenges

Social dialogue in the hospital sector is highly fragmented due to its three-tier ownership structure (public, private, and non-profit hospitals). While municipal hospitals fall under the Public Sector Collective Agreement (TVöD) and university hospitals under TV-L, private and non-profit hospitals follow individual agreements, leading to uneven working conditions across the sector (Schulten and Böhlke 2019). In Germany, church labour law also applies in hospitals run by church welfare associations. This is characterised by the fact that church labour law regulations apply here. Under church labour law working conditions and remuneration are regulated by committees of employer and employee representatives with equal representation. Employees have no right to strike. Instead of the works councils in other sectors, there are employee representatives with significantly weaker co-determination rights (Dittmar & Glassner 2017; Keller, B. 2010) Trade unions, particularly ver.di, advocate for digital solutions that reduce workloads and improve patient care, but stress that digitalisation must not lead to deskilling, work intensification, or reduced human interaction (ver.di 2017). Unlike in other sectors, remote work is largely inapplicable due to the hands-on nature of healthcare, and digitalisation has progressed at an uneven pace across hospital departments.

A key issue, as some interview partners point at, is the lack of a comprehensive digital strategy. Digitalisation efforts often consist of isolated, uncoordinated initiatives, leading to inefficiencies such as "media breakage", where digital processes fail to integrate smoothly (e.g., patient data recorded digitally in emergency vehicles still requiring manual entry upon hospital arrival). Works councils play a critical role in negotiating digital workplace agreements, but many lack the necessary expertise to fully assess the implications of digitalisation.

Trade unions highlight work intensity, data protection and digital training as top priorities (Heipeter 2020). Despite a €3 billion investment package "Krankenhauszukunftsgesetz" from the Federal Health Ministry to support hospital digitalisation, unresolved structural issues—such as low pay, understaffing, and high

workloads—remain major concerns. Without nationwide agreements on digitalisation, the role of works councils in local negotiations will continue to be crucial in protecting employee rights.

The lack of national agreements on digitalisation means works councils continue to play a key role in negotiating workplace-specific policies. Digitalisation affects workload, scheduling, training, telework, and data protection, all of which are central issues in collective bargaining. The hospital sector like other sectors mirrors broader cross-sectoral concerns regarding digitalisation's implications. Key issues include work intensity and scheduling, staff training and adaptability, remote work policies, data security and transparency and work-life balance. These themes, intrinsically linked to digital transformation, intersect with labour conditions central to collective bargaining debates.

5.3 Electricity Sector: Company-Level Agreements

Social dialogue in the electricity sector is primarily conducted through company-level agreements, with works councils playing a central role in shaping digital workplace policies (Roth 2018). Trade unions such as ver.di, IG BCE, and IG Metall advocate for co-determination in digitalisation processes, ensuring that efficiency gains do not come at the expense of service quality or employee well-being.

While digitalisation is well established in the sector, concerns remain over data privacy, employee monitoring, and transparency in digital work environments. Remote work is limited, mainly available for administrative and commercial roles, while on-site presence remains essential in energy production. Trade unions also face challenges in maintaining contact with remote workers, exacerbated by data protection restrictions that prevent access to company communication channels.

A key development was the 2022 digital access agreement in the chemical sector, which allows trade unions to use company e-mail systems and digital bulletin boards to engage with employees. Although the electricity sector has yet to adopt a similar agreement, this precedent provides a potential model for future negotiations (DGB 2022[7]).

The Ukraine conflict has exacerbated energy supply issues, driving up prices and shifting political priorities towards energy security. Trade unions are now focused on rising energy costs, supply vulnerabilities, and potential industry restructuring, making digitalisation a secondary concern for now.

[7] www.dgb.de/themen/++co++634db526-6562-11eb-ac9f-001a4a160123 : html [9.4.2025]

5.4 Comparative Overview: Sectoral Differences and Common Challenges

Trade unions play a key role in advocating for public services, arguing that they should not be fully subjected to market mechanisms. They remain deeply involved in discussions on emerging technologies, including AI, platform work, and blockchain, using workshops, policy papers, and conferences to assess their impact on workers. However, sector-wide agreements on digitalisation remain limited, with negotiations occurring primarily at the company level, driven by works councils' legal rights and advocacy efforts.

Across all three sectors, digitalisation is reshaping social dialogue, with works councils playing a key role in company-level negotiations, while trade unions struggle to secure nationwide agreements.

- In the electricity sector, company agreements dominate, with unions pushing for digital access rights and data protection measures, though sector-wide agreements on digitalisation remain elusive.
- The public administration sector benefits from strong collective bargaining, yet implementation gaps persist at state and municipal levels, and staff shortages complicate digitalisation efforts. While the federal government has launched numerous action plans and initiatives to accelerate digital transformation, implementation continues to lag behind policy ambitions.
- The hospital sector faces high fragmentation in industrial relations, limited telework options, and a lack of coordinated digital strategies, leaving works councils to negotiate digital policies at the local level.

Common challenges include work intensification, employee monitoring, digital training gaps, and the need for co-determination in digital transformation. While digitalisation presents opportunities for efficiency and innovation, ensuring fair working conditions and employee rights remains a central concern for trade unions and works councils across all three sectors.

In general, digitalisation has the potential to improve efficiency and working conditions, but its implementation remains inconsistent, with work intensification and employee monitoring being major concerns. Trade unions and works councils play a critical role in ensuring that digitalisation aligns with employee rights and well-being, though sector-wide agreements remain limited.

6 Major findings

The DIGIQU@LPUB survey reveals that digitalisation remains a work in progress across the electricity, public administration and hospital sectors in Germany. While

digital tools are widely used, improving time management and remote work options, digitalisation has also led to increased work intensity, primarily due to staff shortages. Many employees do not feel sufficiently involved in early digitalisation processes, despite recognising its benefits, such as reduced physical strain and improved work-life balance. However, concerns persist regarding mental health impacts, increased employee monitoring, and blurred work-life boundaries. Job security and digitalisation-related job losses were not seen as critical issues by most respondents.

The pace and scope of digitalisation vary across sectors, influenced by political decisions, institutional structures, and market competition. In energy and healthcare, privatisation and commercialisation have posed significant challenges, while decarbonisation policies further shape digitalisation in the electricity sector. Digitalisation is largely top-down, with limited input from employees in shaping its direction.

The impact on industrial relations and trade unions has been substantial, particularly in relation to remote work, flexible hours and workplace monitoring. The Covid-19 pandemic made it difficult for trade unions to maintain contact with employees due to data protection restrictions, limiting access to company communication channels. Trade unions are advocating for stronger regulation of remote work, privacy protection and the right to disconnect, though no national agreement currently exists on this issue. Discussions continue, but so far, there has been no formal resolution at the national level.

Trade unions are adjusting their strategies to address the challenges of digitalisation, balancing its benefits with workers' rights. However, they have struggled to secure nationwide agreements, instead focusing on company-level negotiations through works councils, which have strong legal rights to influence working conditions. Unions support these councils through training, policy advice, and campaigns, while also engaging in discussions on emerging technologies such as AI, platform work and blockchain. Their core demands include comprehensive workplace co-determination, job protection, expanded training programs, and stronger employee privacy safeguards.

Despite challenges, trade unions have achieved notable collective bargaining successes. In 2022, a digital access agreement in the chemicals sector granted unions access to company communication channels, such as email and intranet platforms, setting a precedent for other industries. In 2021, a collective agreement between the Federal Ministry of the Interior and trade unions established key protections for employees affected by digitalisation, including job security, retraining rights, and pay protection. While this agreement is considered a potential model for broader application, Germany's federal states and municipalities have yet to adopt similar measures.

7 Policy Recommendations for Digital Transformation in Public Services

7.1 Opportunities and Challenges

The digital transformation of public services presents both opportunities and challenges, requiring targeted policy measures to ensure efficiency, employee well-being and sustainable workforce development.

A key priority is strengthening employee representation in remote and mobile work environments. As traditional workplace structures evolve, organisations must establish mechanisms that allow employees to participate in decision-making despite the absence of a fixed workplace. This can be achieved through digital platforms that facilitate communication, engagement, and feedback, ensuring that employees remain connected and actively involved in shaping policies. Additionally, flexible co-determination frameworks should be introduced to enable workers to contribute meaningfully to workplace governance in increasingly agile and decentralised environments.

Addressing the rising concerns surrounding mental health and work intensification is another pressing issue. The demands of digitalisation have led to an increase in work intensity, requiring proactive measures to protect employee well-being. To mitigate these effects, organisations should implement comprehensive workplace mental health support programs, including regular psychological assessments, counselling services, and awareness campaigns to reduce stigma. Encouraging a workplace culture that values work-life balance and fosters open communication can significantly reduce work-induced stress, ultimately enhancing both employee satisfaction and productivity.

As data collection and digital monitoring become more prevalent in public services, ensuring transparency and privacy protection is crucial. A robust governance framework should be established to regulate the use of big data and performance monitoring tools. Clear guidelines on data collection, processing and usage must be enforced, including informed consent mechanisms and data anonymisation procedures. Transparency measures, such as regular communication on data-driven evaluations, can help build trust among employees while promoting a culture of accountability.

Another critical challenge is addressing the chronic shortage of skilled workers in the public sector. Both trade unions and works councils emphasise the urgency of workforce expansion to alleviate increasing workloads. Strategic recruitment initiatives and comprehensive skill development programs should be implemented to attract and retain qualified professionals. Sustainable workforce policies must not

only counteract understaffing but also strengthen organisational resilience and long-term service quality.

Furthermore, effective digital transformation requires clear communication and structured training programs for employees. Workers should be fully informed about the objectives, milestones and expected outcomes of digital initiatives, ensuring transparency throughout the process. The provision of essential training programs is vital to equipping employees with the necessary skills to navigate digital transitions. Without proper training and support, digitalisation risks increasing work-related stress rather than easing workloads.

To ensure the sustainability of digital transformation, public administrations must also develop internal IT expertise rather than relying solely on external consultants and service providers. Strengthening internal competencies is essential for maintaining cybersecurity and data protection standards. Given the growing significance of digital security threats, the public sector must build robust in-house IT capacities to safeguard sensitive data and ensure long-term technological self-sufficiency.

7.2 Recommendations for Transformations

Building on existing initiatives, the success of the digital pact with the Interior Ministry should be expanded beyond federal-level agreements to include state and local governments, as well as other public service sectors. A broader framework for digital transformation across different administrative levels would foster greater coherence and efficiency in public sector modernisation.

Additionally, the rise in remote work has presented new challenges for trade unions and works councils, which often face limitations in conducting on-site visits or engaging directly with employees. Establishing a structured digital access framework, similar to the agreement reached in the chemical industry, would allow unions and works councils to maintain seamless engagement with workers despite shifting workplace dynamics. Such measures would ensure that employee representation and advocacy efforts remain effective in an increasingly digital work environment.

Expanding the scope of collective bargaining is also necessary to address the needs of workers in non-traditional employment models. Trade unions should formulate strategies to include precarious workers, self-employed professionals and platform workers in collective agreements. By extending standardised working conditions across sectors and throughout the value chain, unions can help protect workers from the risks associated with fragmented and precarious employment structures.

Finally, a coordinated European digital strategy is essential to ensuring a harmonised approach to digital transformation in public services. National governments and the European Union must define clear digitalisation objectives and establish a

unified trajectory that aligns technological progress with social and labour protections. A cohesive strategy at the European level would facilitate knowledge-sharing, standardised best practices, and improved collaboration between member states.

In conclusion, the digital transformation of public services must be approached with a comprehensive and worker-centric perspective. Strengthening employee representation, protecting mental health, safeguarding data privacy, and addressing workforce shortages are critical to ensuring a fair and sustainable transition. By fostering inclusive governance, enhancing public sector IT capabilities, and expanding collective bargaining mechanisms, digitalisation can serve both public sector efficiency and employee well-being.

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